COMMITTEE ON JORDAN LAKE (LRC)(2013)
January 22, 2014
Room 544 of the Legislative Office Building

The Legislative Research Commission Study Committee on Jordan Lake (LRC)(2013) met on Wednesday, January 22, 2014 at 9:00 AM. The meeting was held in Room 544 of the Legislative Office Building. Members present were: Senators Rick Gunn, Chair, Neal Hunt, Floyd McKissick, Trudy Wade, and Representatives John Faircloth, Chair, Jon Hardister, Tom Murry, Edward Hanes, Stephen Ross, and Tim Moore.

Senator Rick Gunn presided.

Senator Gunn called the meeting to order at 9:07AM. He welcomed all attendees, and introduced the Senate and House Committee Members. Senator Gunn thanked them for their willingness to serve. He introduced the Committee Staff members and Committee Clerks.

Senator Gunn announced that this was an informational only meeting. Tom Reeder from The North Carolina Department of Environment and Natural Resources (NC DENR) presented information on where Jordan Lake has been and also some of its history. Before Mr. Reeder's presentation, Senator Gunn introduced the House and Senate Sergeants at Arms and thanked both for their service. Senator Gunn asked Jeff Hudson, Committee Counsel, to make a brief report.

Mr. Hudson stated that he would like to briefly go over some of the background information that was in the Committee packets. The first document was the LRC Authorization Letter that created this committee (Attachment A). It could be found on page 3. The next document is the Rules for the LRC (Attachment B), that apply to this study committee. There are particular rules that are different than other study commissions. Some that he pointed out provide that this study committee is limited to four meetings prior to the convening of the 2015 General Assembly. The other rule that he wanted to note was the timing. If the Committee does decide to issue an interim or final report, the interim report has to be submitted no later than Friday, April 25, 2014. That would give the full LRC time before the short session to review the report. A final report to the 2015 General Assembly would have to be transmitted no later than December 19, 2014. The final document that Mr. Hudson discussed was the 2013 Jordan Lake Legislation (Attachment C). There were two major pieces of legislation that passed in the 2013 Session. The first was Senate Bill 515. The main part to remember about that bill is that it put the Jordan Lake Rules and Session Laws that are not already in effect on a three year delay. Some rules have already gone into effect. The second piece of legislation that was passed is Senate Bill 402. This established the Jordan Lake pilot Demonstration Project. The final document in the packet was

Mr. Reeder's presentation. Mr. Hudson stated that they will put all of the documents on the Committee's website so they will be available to the public.

Senator Gunn thanked Mr. Hudson, and then introduced Tom Reeder, Director of North Carolina Division of Water Resources.

Mr. Reeder introduced himself stated that his presentation would give the Committee some background information about how we got to where we are today with Jordan Lake, what the water quality currently is in Jordan Lake, and what the Pilot Demonstration Project is about. (See Attachment D)

Mr. Reeder displayed the slide on the second page describing the Jordan Lake Watershed. He stated that is about a 1700 square mile area that goes from the Western Triangle to the Eastern Triad, and encompasses everything in between. The history of the Lake dates back to 1945 when they had some flooding in the Cape Fear River Basin. The Corp liked to build projects to control flooding. It was authorized in 1963, and construction began in 1967. An Environmental Impact Statement (EIS) was conducted after the construction had already begun. The reason was the NEPA Law that requires the EIS was passed after they started construction. The Clean Water Act and the National Environmental Policy Act, things that require the completion of the EIS, were enacted after the construction of the lake began. The impoundment of the lake, the closing of the gates on the dam, was held up by a federal court decision. Why? People asked if we knew the lake was going to be eutrophic. They did know the lake was going to have water quality problems before it was built. They did the EIS and everyone knew there was going to be a problem with nutrients going into the lake. It was going to cause the lake to become eutrophic, or cause formation of algae in the lake. That was what the federal court decision was about. The actual closing of the gates to the dam on the lake were held up as the court reviewed a lawsuit that tried to prevent this. The EIS said the water would eventually become impaired if the lake was constructed and used. So why did North Carolina go ahead with construction? One reason was for flood control purposes, to prevent future flooding in the Cape Fear Basin. The second reason was for drinking water for the Triangle. The State of North Carolina accepted that deal. They knew that they were going to create a eutrophic lake, but in return they received flood control and drinking water. The gates were closed around 1981 to 1982. The lake was impounded, and immediately after that they started looking at ways to control the nutrient problem that would happen, the algae problem, and the trend towards an eutrophic lake. In 1983 after the lake was impounded, the Environmental Management Commission (EMC) declared the lake to be nutrient sensitive and imposed some phosphorus limits on wastewater dischargers.

The primary uses of Jordan Lake are flood damage reduction, water supply, water quality control, fish and wildlife habitat, and outdoor recreation. About 1.5 million people a year use Jordan Lake for recreational boating and fishing.

Who uses Jordan Lake for water supply? The water supply allocation of Jordan Lake is owned by the State of North Carolina. It is the only lake, only reservoir, in the State where the State owns the water supply pool. North Carolina owns basically 100 million gallons a day of Jordan

Lake, and it is up to the EMC to allocate that water supply to the people that need it. The primary users are Cary and Apex, at 32 million gallons a day (MGD). Chatham County is allotted 6 MGD, the City of Durham, 10 MGD, the Town of Holly Springs, 2 MGD, the Town of Morrisville, 3.5 MGD, Orange County, 1 MGD, Orange Water & Sewer Authority, 5 MGD, and Wake County – RTP South, 3.5 MGD. Only 63 of the 100 MGD available are being used. The EMC has not allocated all the MGD yet. The EMC is going through a 4th round of allocation now which should be done sometime in the 2015 time frame. Additional communities interested in allocation are Sanford, Fayetteville Public Works Commission, Hillsborough, and Pittsboro.

When discussing the watershed, Jordan Lake is unique because of the way it is constructed, the hydrology, and because it functions as three different lakes. There are three different watersheds to go with the three different lakes. The first is the largest portion, the Haw Subwatershed, which is 80% of the watershed, and consists of the Triad area, Alamance County, Burlington, and Mebane. They all drain down to the Haw Arm of the Lake. There is the Upper New Hope Subwatershed, located close to Durham. Beneath you will find the Lower New Hope Subwatershed. All three of the subwatersheds make up Jordan Lake Watershed. The Haw River Arm is moderately impaired, the Upper New Hope Arm is severely impaired, and the Lower New Hope Arm is slightly impaired.

Mr. Reeder referred to the water quality as impaired. What does that mean? Jordan Lake is considered eutrophic or hyper-eutrophic. The Upper New Hope Arm became severely impaired with Chlorophyll-a in 2002. The Lower New Hope Arm and Haw Arm became impaired for Chlorophyll-a in 2006. The Haw Arm became impaired for pH in 2006. The Upper New Hope became impaired for turbidity in 2006, and a portion of the Upper New Hope Arm became impaired for pH in 2008. Mr. Reeder stated that focus needed be on the Chlorophyll-a impairment because research indicated that once you correct the Chlorophyll-a impairment the pH and turbidity impairment should correct themselves. Nitrogen and phosphorus is the cause of Chlorophyll-a. They are the nutrients that feed the Chlorophyll-a. Nitrogen and phosphorus are not pollutants themselves. They are nutrients. The problem is when excessive nutrients are in the water, and the water is stagnant, not free flowing, Chlorophyll-a will form. Chlorophyll-a is a pollutant. If you have too much nitrogen and phosphorus in the water it becomes stagnant. If held there for along time, Chlorophyll-a will form, which is basically algae. That algae is a pollutant and North Carolina has standards for the algae. When it exceeds the standards, the lake becomes impaired by the standards of federal Clean Water Act. The standard for Chlorophyll-a in N.C. is 40 micrograms of Chlorophyll-a or algae per liter of water. The N.C. standards are if 10% of measurements taken in the lake exceed the standard, than the lake is considered impaired. Mr. Reeder referred to a graph showing that from 1981 through 2013, more than 10% of the samples taken were above the standard of 40 micrograms per liter. Refer to Attachment D, pages 12-17 to see graphs of Chlorophyll-a levels from 2001 through 2013 for The Haw River Arm, the Lower New Hope Arm, and the Upper New Hope Arm of Jordan Lake. The Haw River Arm is slightly impaired. The Lower New Hope Arm is moderately impaired. The Upper New Hope Arm is extremely impaired by the formation of Chlorophyll-a.

The total nitrogen in Jordan Lake is fairly steady in all three Arms. Mr. Reeder referred to a slide showing the total nitrogen in Jordan Lake from 1997 through 2013. The graph showed that nitrogen levels spiked in 2008 and 2009, and he attributed the increase to the amount of rainfall that was in the area in those years. When there is less rainfall, nitrogen has a longer residence time, and a longer chance for it to accumulate if there is no flowing water. The total phosphorus in Jordan Lake has had a steady decline. Mr. Reeder attributes that decline to the portion of the rules that was implemented requiring phosphorus controls on the wastewater dischargers in the lake. The pH levels in Jordan Lake have become somewhat worse since 1984. A couple of the Arms are now impaired for pH. The pH is like an accessory to the Chlorophyll-a impairment, and once the Chlorophyll-a is managed the pH problem will be corrected.

What if North Carolina did nothing to correct this? What would happen? Obviously the problem would continue to get worse. If N.C. did nothing, the Chlorophyll-a problem would continue to get worse, especially with continued development in the different watersheds of the Lake. The water can be treated so it can be used for drinking water supply, but the problem is the water quality would get so bad it would probably no longer be cost effective. N.C. is not allowed to do that for two reasons. The first is the federal Clean Water Act. It requires all states to adopt standards for pollutants. It also says that once the standards are exceeded to the level where the water body is considered to be impaired, you have to mitigate the impairment. It requires states to develop Total Maximum Daily Loads (TMDL). The TMDL requires the state to set loading limits on impaired waters that will eventually mitigate that impairment. We know that the Chlorophll-a is caused by the nitrogen and phosphorus loading in the lake. The TMDL that is required under the federal Clean Water Act requires the State to develop nitrogen and phosphorus loading limits that will allow the lake to recover and not be impaired. These TMDLs are approved by the federal Environmental Protection Agency (EPA). They become a federal requirement once they are in place. That is basically what the Jordan Lake Rules are all about. Mr. Reeder stated that there are two State statutory mandates that require North Carolina to take action in the lake. The list of those is the 1997 North Carolina Clean Water Responsibility Act, which said North Carolina needed to set and enforce discharge load limits for all nutrient sensitive waters, and make sure all sources reduce in a fair, reasonable, and proportionate manner to allow these nutrient sensitive waters to recover. The second is the 2005 Drinking Water Supply Reservoir Protection Act. It provides that North Carolina needed to develop nutrient control strategies to protect critical sources of drinking water for North Carolina's future. The 2005 Session Law froze additional allocations of nitrogen and phosphorus to Jordan Lake until there was some type of strategy in place to remediate the problem, which resulted in the Jordan Lake Rules. DENR has the State requirement and the federal requirement to take some action in the Lake when the standard has been exceeded to the point where the Lake has become impaired, like it is today. What did DENR do? DENR developed the Jordan Lake Rules Program also known as Jordan Lake Strategy. They started working with the dischargers in 1999 to 2002 to develop a lake model. In 2003 to 2006 there was a stakeholder process where they met to discuss the limits that needed to be set, what goals needed to be met, and what rules needed to be reviewed. From 2007 to 2008 the EMC took the rules out through the Administrative Procedure Act (APA) ruled making process. There was a lot of opposition to the Rules. In the 2009 Session, the General Assembly modified the Rules. In August of 2009 the

Jordan Lake Rules became effective. Since then, there have been Session Laws that have affected the implementation of some of the Rules. People ask about the cost of the Rules. The Department's fiscal note estimated that the cost of the entire implementation of the package would be around $800 million to $1.5 billion to clean up Jordan Lake. The Rules look at two different sources of nitrogen and phosphorus that are in the subwatersheds and in the Lake itself. There are two different types of controls. The point source control is when the discharge from a pipe into a lake is controlled. There is a non point source control which is like having stormwater run off from a parking lot, and is running in sheet flow, and that water eventually comes down into a river or another water body that drains into a lake. The Jordan Lake Rules set up a level of nitrogen and phosphorus management and limitation for everyone that could possibly discharge into the Jordan Lake Subwatersheds and Jordan Lake itself. There were Rules for agriculture, Rules for stormwater, stormwater runoff from new development, and stormwater limits for existing developments. This was the first time in North Carolina that DENR had proposed applying stormwater control retroactively to existing developments. There were buffer rules that are very effective in removing nitrogen and phosphorus from stormwater sheet flow. There were stormwater rules for State and federal entities, and some fertilizer management. That was the suite of Rules that were developed to try to manage nutrient over-enrichment in Jordan Lake. This illustrates that all these entities are responsible for contributing to the problem, therefore they should share equally in trying to rectify the problem. As Mr. Reeder had stated earlier, there have been Session Laws introduced that delayed the implementation of some of the Rules. The Rules that are currently being implemented are Agriculture, New Development Stormwater, Buffer Protection and Mitigation, Wastewater Phosphorus, State/Federal New Development Stormwater, and Fertilizer Management Plans and Training. The Jordan Lake delayed rules are Agriculture, (have not implemented nitrogen and phosphorus requirements for pastureland or cropland), New Development Stormwater, Existing Development Stormwater, Local Governments and State and Federal Entities, and Wastewater Nitrogen. These items are in the Rules, but have not yet been implemented.

How much of the nutrient impaired watersheds do we have in North Carolina? About 36 % of the state has some type of nutrient strategy in place. North Carolina is trying to develop a strategy for the High Rock Lake watershed, which results to about 10 % of the State. There are other impaired watersheds that stand alone that DENR is working on.

This brings us to the 2013 Session Bill 515 and Senate Bill 402, and what is called the Jordan Lake Pilot Test, or Improvement Demonstration Project. Mr. Reeder reminded the Committee of the earlier discussion of point source controls and non point source controls. During the 2013 Session, the idea was proposed that North Carolina should see if there is some sort of noninvasive treatment that the State can do in the lake to foster the mitigation of the lake. Something is needed that will help reduce the formation of Chlorophyll-a, and will help augment the nonpoint and point source controls so the impairment of the lake could be removed without possibly spending $1.5 billion. Mr. Reeder reviewed that Jordan Lake is currently impaired due to Chlorophyll-a (algae) abundance in the summer months. A contributing factor is the presence of cyanobacteria and Harmful Algae Blooms (HABs). HABs require nutrients and stagnant water, and produce toxins, odors, high pH, low dissolved oxygen, and can result in fish kills.

HABs restrict the development of zooplankton and other organisms that can naturally control Chlorophyll-a. The upper and lower New Hope Arms have a retention time of 418 days. If a lot of nitrogen and phosphorus are in the water and are held there for over a year, subjected to a North Carolina summer, the result will be a lot of algae in the water. The water is just sitting there. The Haw River Arm has a lesser problem. It has a retention time of 5 days, which is why it is much less impaired than the Upper New Hope Arm. What is zooplankton? They are microscopic animals or organisms that eat algae. They will reproduce as much as they can based on the amount of algae that is available. The idea is to enhance the circulation of the water because it is stagnant. Are there devices that can be used to enhance the circulation of the water? Yes, there are mixing devices. They are put in the water to keep it moving and circulating to reduce stagnant problems which would address the formation of Chlorophyll-a. The proposal is to provide long flow circulation of water in the lake to reduce the areas of stagnant water, breaking the HAB cycle. The aeration/mixing devices will be deployed to provide circulation in Morgan Creek, where it is heavily impaired, and the Haw River Arm where it is slightly impaired. It will be necessary to have three dozen to keep the water circulating to alleviate the Chlorophyll-a formation in these two arms of the Lake.

The plans for this project are to finalize the lease by January 2014, and deploy the mixing units in the Haw River and Morgan Creek Arms of Jordan Lake by March 2014. By April 2014, the plan is to have all the units in place and operational. By October 1, 2015, the Interim Report is due to Environmental Review Commission, and by April 1, 2016, the final report is due to Environmental Review Commission. DENR would like to have two summers worth of data, the summers of 2014 and 2015. Mr. Reeder reiterated that algae grows in the summer. They would like to get see, based on the monitoring data, if the units will provide any help at the nonpoint and point source controls that are located upstream in the watershed. DENR has done the background monitoring that they need to do to support this study. They started in September 2013. DENR is getting the units ready to go into the water so North Carolina will see what they can do to mitigate the problem.

Mr. Reeder concluded his presentation at 10:00AM. Senator Gunn thanked him and asked the Committee Members if they had questions.

Representative Moore stated to Mr. Reeder that what he heard was a lot of the pollution, both in terms of nitrogen and phosphorus, was coming from the sewer treatment as opposed to development and runoff. He asked if there had been discussions about how much of the sewer treatment that is being dropped back into the lake is causing the problem, and is that the culprit that we should be looking at as opposed to other things, particularly development? Mr. Reeder referenced a slide from his presentation that listed the level of contributions from the different sources in each one of the Arms. He stated that he thought it was the Upper New Hope Arm where the point sources or the treatment plants account for over 50% of the problem. It is not as bad in the Lower New Hope Arm and the Haw River Arm. The Rules were set up to share the load proportionately based on the contribution. In those subwatersheds where the point sources are more of a major contributor, they gave them more of the load in those subwatersheds. In response to his second question, Mr. Reeder stated that Representative Moore was right. He

clarified that if you have a treatment plant and are only operating at 50% capability they base your input on the overall nitrogen and phosphorus deposition into the watershed. The technology to meet some of the loading limits is very expensive. Due to the cost, a lot of the wastewater treatment plants will do whatever they can to delay those costs to the maximum extent that is practicable before they have to implement. If they can do that by keeping the amount practicable down using their plant at a lower capability or capacity, he believes they will do that. Representative Moore asked if they looked at the cost based on per gallon as opposed to total discharge, and if not, is that based on cost prohibitive. Mr. Reeder stated that he would have to refer that question to his staff. Mr. Rich Gannon asked Representative Moore to rephrase the question. Representative Moore stated that his question was referring to the discharge coming from sewer treatment plants, as opposed to looking at the discharge standards based off of total production, looking at per gallon the standards of the phosphorus and nitrogen input, have they looked at doing that standard, and if not, why? Mr. Rich Gannon, Non Point Source Planning with DWR, commented that he was struggling to understand Representative Moore's question. Representative Moore explained that if a plant is only operating at 50% capacity, then it only has to have the discharge 50% clean. If it were at 100%, it would have to do more per gallon to limit that. Mr. Gannon asked if his question went to cost. Representative Moore asked would it be more costly to look at per gallon as opposed to total discharge. Mr. Gannon stated that if they looked at per gallon it would be sometime in the future before they meet their total mass load, so if they are meeting it at a smaller flow currently, there still needs to be in the end the same reduction to the lake. Mr. Reeder advised Representative Moore that they would need to research this subject and will provide an answer in a future meeting.

Representative Hanes referenced one of Mr. Reeder's slides on water quality in the lake and the rules that the EPA is looking at with nitrogen and phosphorus. He asked why federal limits focus on nitrogen and phosphorus as opposed to Chlorophyll-a? Mr. Reeder responded that the EPA has asked them to draw up a nutrient criteria development plan for North Carolina. They have developed a cohesive plan to manage nutrients to prevent the formation of Chlorophyll-a in these eutrophic water bodies in the State. One of the things they considered when they developed the nutrient criteria development plan is whether they need to have numeric criteria for nitrogen and phosphorus in this State. Mr. Reeder stated that they do not have those today. Federal government would like for them to look at that. From a management perspective, they are willing to consider it where it is necessary, but that could be extremely costly for North Carolina to develop statewide nitrogen and phosphorus numeric criteria. They are trying to develop a way where they can address the federal governments concerns, possibly by developing site specific nitrogen and phosphorus criteria for some impaired water bodies in North Carolina. They do not want to have a statewide numeric nitrogen and phosphorus limitation, because they are present everywhere in the State and it would be extremely costly.

Senator Wade stated that she assumed that North Carolina had not done the testing for implemented wastewater nitrogen testing yet, but have tested for the phosphorus and the sewage outage. She asked if some people are already testing and is it keeping the nitrogen levels low? She stated that she did not understand how they could go by the graph, because some areas had done more than others. She asked if he was saying that it had been decreased in agriculture by a

quarter on croplands. Mr. Reeder stated that agriculture implemented one quarter of their requirements. Senator Wade asked if there was any way to determine how much had been implemented in the different regions. Mr. Reeder answered that DENR would have to do some research on that. He clarified that Senator Wade was asking where they are today, who has done what, and what specific local governments have done. Mr Reeder agreed that she was right in that some had gone beyond what they needed to do. Some have such a low capacity even though they have not done much, they are basically meeting the limits already. That is something DENR has not evaluated. They would have to look watershed by watershed, local government by local government and see what they have done, and try to figure out exactly how much nitrogen and phosphorus loading limits and loading reduction has been achieved. That study has not be done as of yet. Senator Wade stated that she was asking that question because the Rules have not been implemented yet, but know they are coming, and some local governments have done things. She surmised that they do not know how much has been done and there are not any improvements. She asked if that would be a true statement. Mr. Reeder answered that he thought they had seen some improvements in the Lake. He stated that there are two reaches in the lower New Hope Arm that are probably coming off the impaired list. There is a lower reach in the Haw River Arm that is getting close to coming off the impaired list. They have seen phosphorus levels go down as a result of the phosphorus limitation on wastewater treatment plant dischargers. Mr. Reeder confirmed that her question was how much had been done and how much more would need to be done to mitigate the entire Chlorophyll-a problem. He stated that was a difficult thing to say. He is interested to see if in the Haw Arm, where the impairment is not so bad, to see if the circulation technology can augment what has been done today to try to move those other monitoring stations to a level where they are no longer impaired. Senator Wade stated that it would be fair to say that we really do not know how much improvement they have had based on what has been implemented, because they really do not know everything that has been implemented. The one thing they do know is the Lake is still impaired. Mr. Reeder confirmed that portions of the Lake are still impaired. He stated that he felt like they have a rough idea of what has been done, but they have not tried to correlate that to the level of improvements in the Lake.

Senator McKissick stated that he wanted to reference the water allocation issue. He noted the 63 MGD set. Of the actual allocations that have been made, how many of these communities are actually drawing the water down and using the allocations? Mr. Reeder referred the question to Tom Fransen, the Water Supply Planning Section Chief. He stated that most of the communities, with the exception of Holly Springs, are using or have the potential of using the allocation on any given day. He thinks they are somewhere between 35 and 40 MGD, but he can check that number and get back to the Committee. Mr. Reeder asked if Durham was using its allotted 10 MGD a day. Mr. Fransen said no, but Durham has an agreement with Cary to be able to share when needed. Mr. Reeder stated that they look at the potential to use it. If you have the infrastructure in place to use that water, then they view it as the water being used. Any day you decide to use it, you can flip a switch and start using that water. Mr. Reeder clarified what Mr. Fransen stated that about 40 MGD of the 63 MGD, has the potential of being used on a daily basis. Senator McKissick asked where the intakes are. Is there a common intake? Mr. Reeder answered yes, it is Cary's intake. Senator McKissick asked where is the intake located. Senator

McKissick stated that if it is in the lower part of the lake where the water is the cleanest, that would make a significant difference, as opposed to being in the Upper New Hope area. Mr. Reeder referred to Mr. Fransen. He answered that you can see it when you drive across Highway 64. If traveling going west, it is on the right. Senator McKissick asked if it was in one of the most polluted areas. Mr. Reeder answered that was in the Lower New Hope Arm. Senator McKissick stated that in terms of the actual goals and standards that are in place today, if the existing standards were fully implemented how realistic is it that those standards could be obtained, and if they were, what kind of time frame are they looking at without using this new technology? Mr. Reeder stated that based on the science that was available to them at the time they developed the program, it should mitigate the problems in the lake, but there is no guarantee to that. They have had nutrient management strategies in place in the Tar River Watershed and the Neuse River Watershed that were supposed to mitigate this same type of problem. They have not seen the improvement in the estuaries that they were hoping to see. That is why they want further with the Jordan Rules, and started looking at existing development because they found that these early nutrient management strategies that they implemented did not give the results they were looking for. The Neuse Rules have been in place since the late 1990's, and they continue to have problems in the estuary that they had when they began that program. There is no doubt that they have prevented the problem from getting worse, but they have not achieved the end goal of cleaning up the estuary like they wanted. Mr. Reeder stated that he cannot guarantee that if they put all the rules in place, $1.5 billion worth of rules, that Jordan Lake would be cleaned up in 5 or 10 years. He cannot guarantee this, nor can anyone else. Senator McKissick stated that if all the rules were fully implemented, they do not know if they would be effective in obtaining the goals, and they do not know what timeline that it would be accomplished. Mr. Reeder asked Mr. Rich Gannon if he agreed. He answered that it is very difficult to guarantee, but pointed out that these Rules are more comprehensive, particularly in addressing existing development. The existing development rules have the lengthiest timeline where the local governments come in with their plans and propose their pace of implementation. It could take 10 to 40 years for them to achieve the percentage reductions that are called for in the Rule. Mr. Reeder stated that the crux of the problem is that we built this lake because we wanted flood control and drinking water. The Lake is eutrophic, it has an algae problem. Everyone knew that it was going to have an algae problem the day the gates were closed on the dam. The EPA now states that it has to be cleaned up. It is a federal mandate under the Clean Water Act. They obtain the best available science that they can to develop an idea on how to clean up the lake. The program comes with a 1.5 billion dollar price tag. North Carolina cannot spend $1.5 billion to clean up Jordan Lake. He cannot guarantee that all $1.5 billion worth of controls will work and whether they might work in 5 to 20 years. Mr. Reeder stated that they do not know and that is what the pilot test is all about. They are trying to see if there is something else North Carolina can do to try and improve the problem without spending $1.5 billion, and is there some way we can satisfy the federal government and our requirements under the Clean Water Act. That is the situation North Carolina is in. Senator McKissick stated that in terms of the test that is being conducted at this time, what is the timeframe that they can achieve good qualitative data that will let them know if they are having some kind of measurable impact? Mr. Reeder stated that he felt like they would have a rough idea by fall 2014, and a much better idea by fall 2015. He felt like by fall 2015, when the interim report is due, he will be able to come to

the Legislature and advise whether the machines will be able to help North Carolina. Senator McKissick asked that with the wastewater treatment plants that are out there now, that are efficient, did they have an idea of how many there are, and what is the type of equipment that is operating at the highest level. Mr. Reeder stated that they have that data and would be put it together for the Committee Members. Mr. Reeder stated that they would send it to Jeff Hudson so he could distribute it.

Senator Hunt asked about the delayed Rules in regards to stormwater and new development, he assumed that most of these communities and counties have stormwater and new development requirements. Mr. Reeder answered yes and said that most of the watersheds are covered under some form of stormwater program and one third of the local governments have already implemented the Jordan Rule requirements voluntarily. Senator Hunt asked for a list at the next meeting of what implementations have been made so the Committee could compare. Mr. Reeder answered yes.

Representative Murry stated that he knew several of the municipalities in western Wake County have already voluntarily done a significant amount of this. He said there was a cost associated with it and they have voluntarily done it. It is part of the $1.5 billion and it is having an impact, which should be accounted for. Representative Murry stated that people are investing and improving this watershed, and clean water is an economic development issue and people in the watershed take it seriously. Another thing is that economic development wants a certainty. The end point that everyone is looking for is a cleaner Jordan Lake, and how it is obtained is what this Committee is about. He thought the Rules were agreed to in a broad basis, and so his question is what will the Committee do differently from the Rules that were agreed to, based on the Solar Bee technology, and the data that comes back. He stated that it could come back worse. Then it will have to be determined what will be done with that information. That is his concern. Representative Murry's other suggestion for this Committee is the legal implications of the Clean Water Act, receiving letters from the EPA, and if they have a different standard than North Carolina has. What will happen? Will the EPA come in and manage it themselves? What is the ultimate end point if the EPA determines they are not meeting the obligations in the Clean Water Act? Mr. Reeder answered that they have a total maximum daily load for this which is a mitigation plan for the lake. That is approved by the EPA, therefore becomes a federal requirement. They delayed some of those requirements in Senate Bill 515 for the pilot test. Mr. Reeder and his superiors talked with EPA, and EPA told them that they were not in favor of the pilot test, but they would allow them to move forward with it and analyze the data. The EPA told DENR that they would not take any action until they have had a chance to conduct the pilot test and review the data and determine how they would like to move forward.

Senator Gunn thanked Mr. Reeder for his presentation.

Representative Faircloth commented that he appreciated the attention the Committee is showing. This is a very important issue that concerns a lot of North Carolina. He stated that they wanted to be going in the right direction as the issue is studied. He commented that he felt like the primary concern is what is best for our State and what is best for the lake. What steps need to be

taken to ensure that we are not back again in another 4 to 5 years with not having found a solution. He thanked everyone for their attendance.

Senator Gunn challenged the members of the Committee and various stakeholders to read the LRC Study Committee Directive. He encouraged them to understand and appreciate where we are trying to move this. He stated that he appreciated everyone's hard work.

There being no further business, the meeting adjourned at 10:30AM.

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Senator Rick Gunn, Presiding

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Becky Bauerband, Committee Clerk